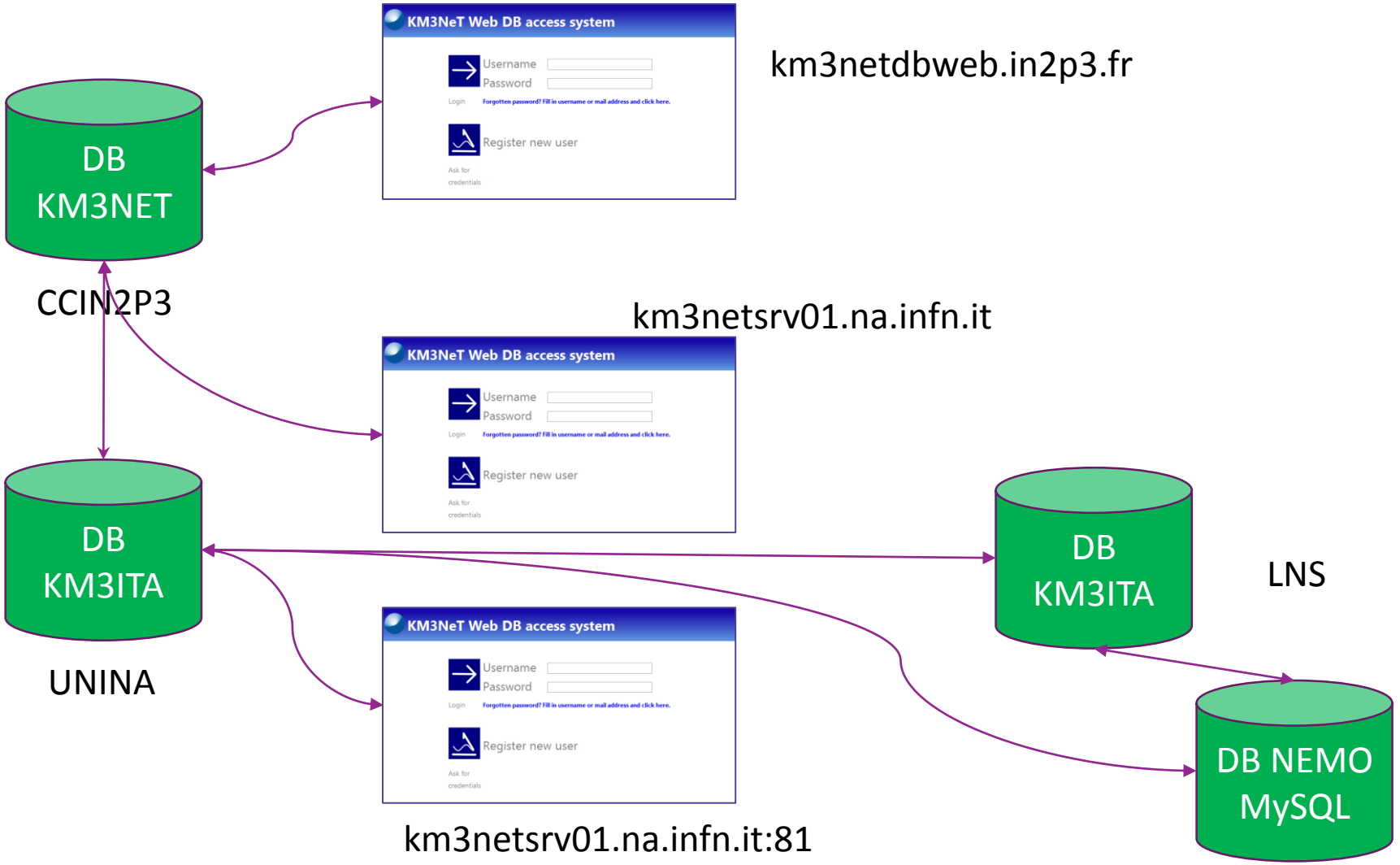
DATABASES
DB INTERFACE
GRAPHICAL INTERFACES

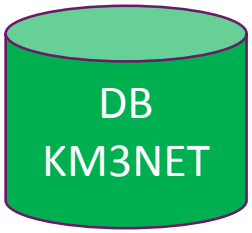
DATABASE SERVICES IN KM3NET

Cristiano Bozza – Università di Salerno – LNS, NOV 2014

DB System in KM3NeT



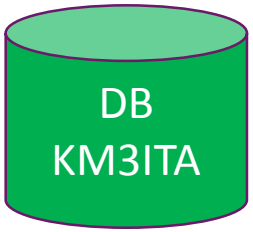
DB System in KM3NeT



CCIN2P3

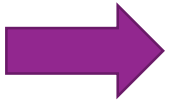
Oracle Database Server
Enterprise Edition
RAC (3 servers in SCAN)
700 GB (extendable)

Sized to host several TB's/year
of Slow Control / DAQ Control data



UNINA

Oracle Database Server
Standard Edition
Expires July 2015



Oracle Database Server
Enterprise Edition
Partitioning Option
100 NUPs Perpetual
~12 TB already available

Oracle licenses purchased with special conditions
100 NUPs = 25 users × 8 cores × 0.5 (Intel core factor)

State of DB's

- CCIN2P3
  - KM3NeT Collaboration management info (including authentication)
  - PBS
  - Integration/cabling information
  - Products
  - Test/calibration results
  - PPM-DOM and PPM-DU book-keeping
  - Detector definitions
  - Runsetups
  - Slow control / DAQ control data log
  - In progress:
    - Paper authorship information
    - QA/QC documents

- KM3Ita
  - User accounts sync'ed with CCIN2P3
  - Products (in progress)
  - Test/calibration results (in progress)
  - Under development:
    - Runsetups
    - Slow control / DAQ control data log

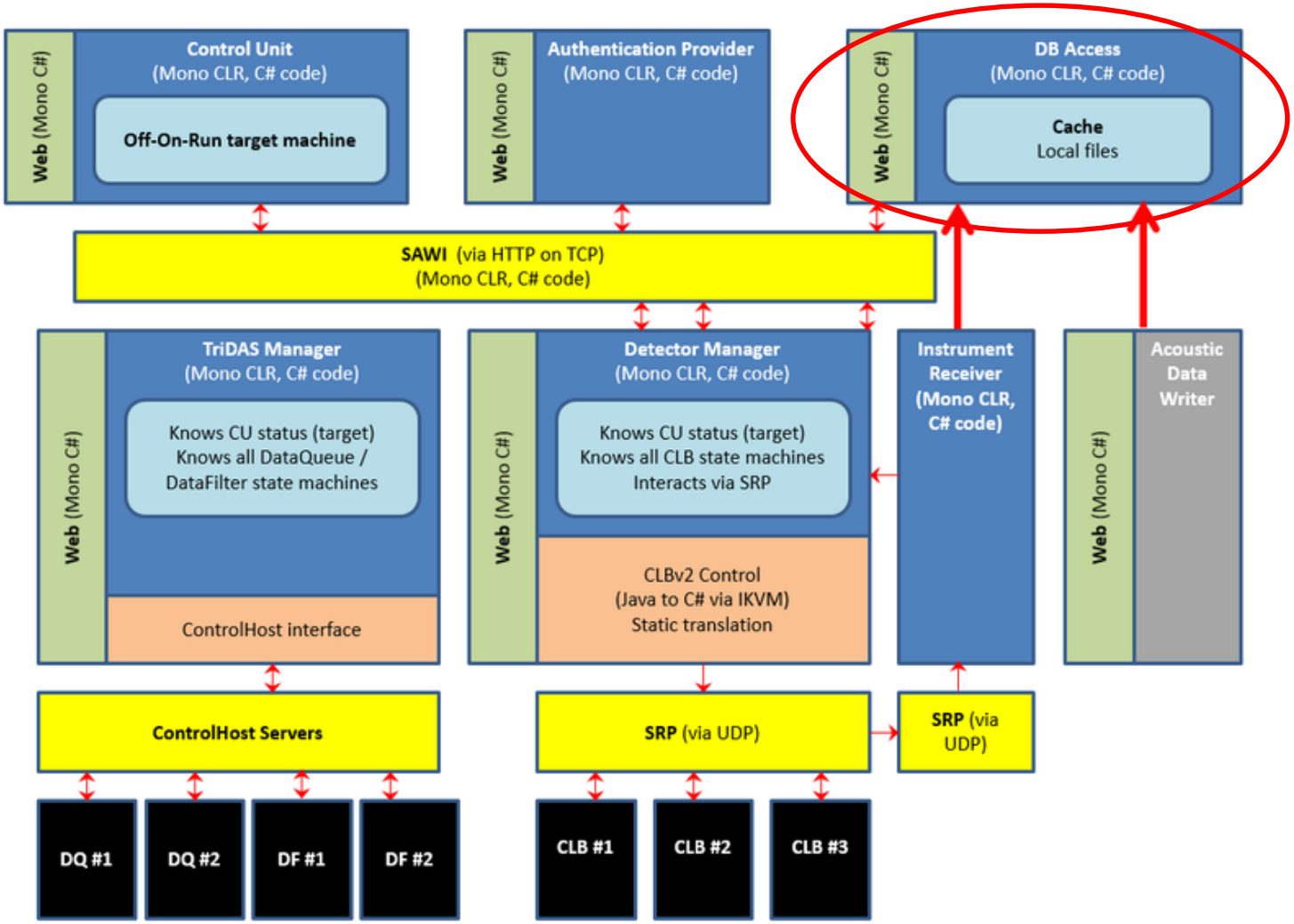
KM3Ita

- Complete dataset of NEMO phase 2 Slow Control
  - Copy from MySQL DB
- GUI interface to upload component documentation and test/calibration data in Excel format or ASCII format (PSS)
- A fraction of components is already documented, more to come soon

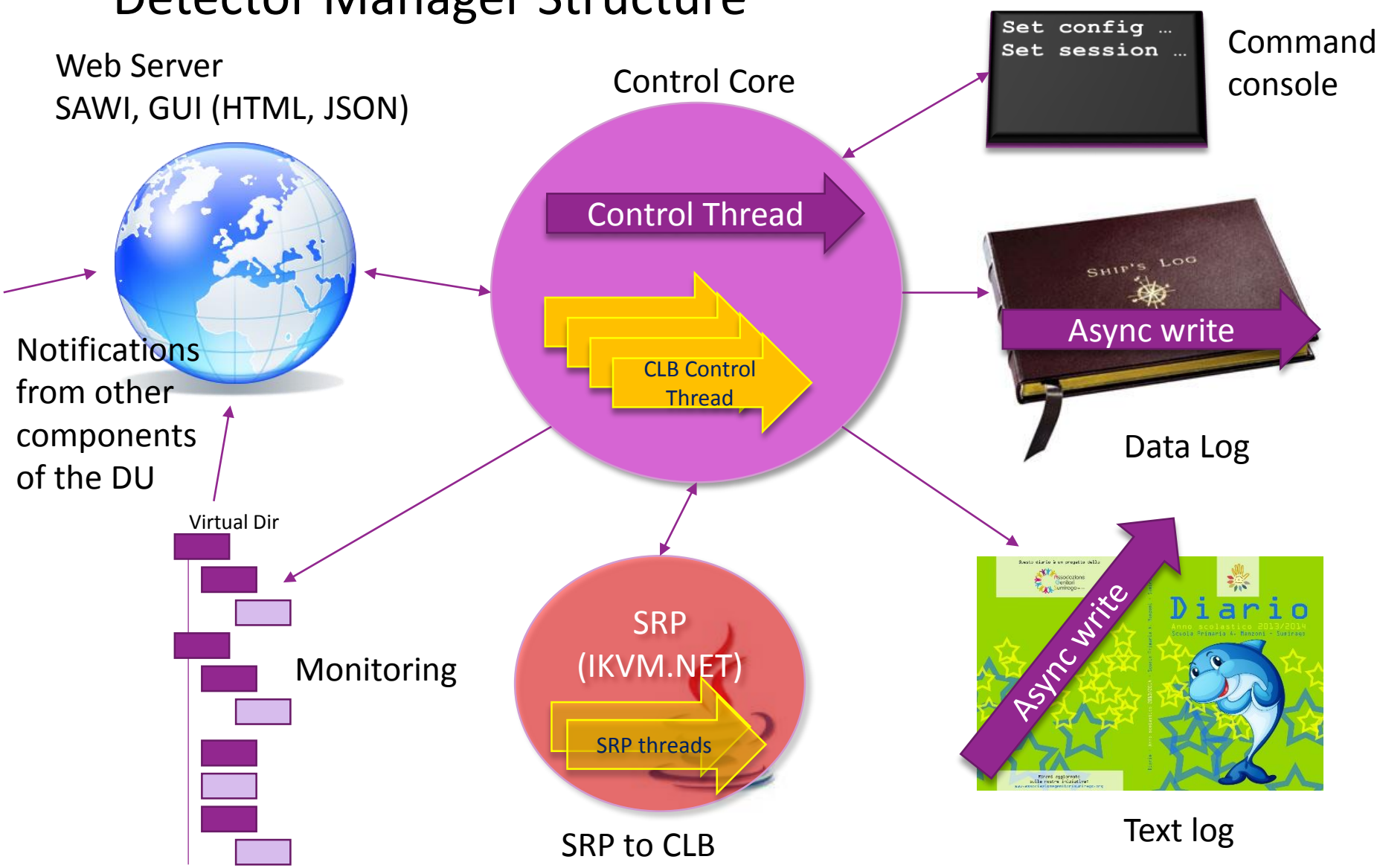
Functions of the DB Interface (by Arnauld Albert)

- Provide access to the DB
  - HTTP protocol
  - Optimized SQL (read) and DML (write)
- Local read/write cache managed and optimized
  - Fault-tolerance with respect to network failures (works even if the central DB is temporarily unreachable)
  - Hides network latency
- Authentication services
  - Unified login credentials provided by central DB
  - Local encryption

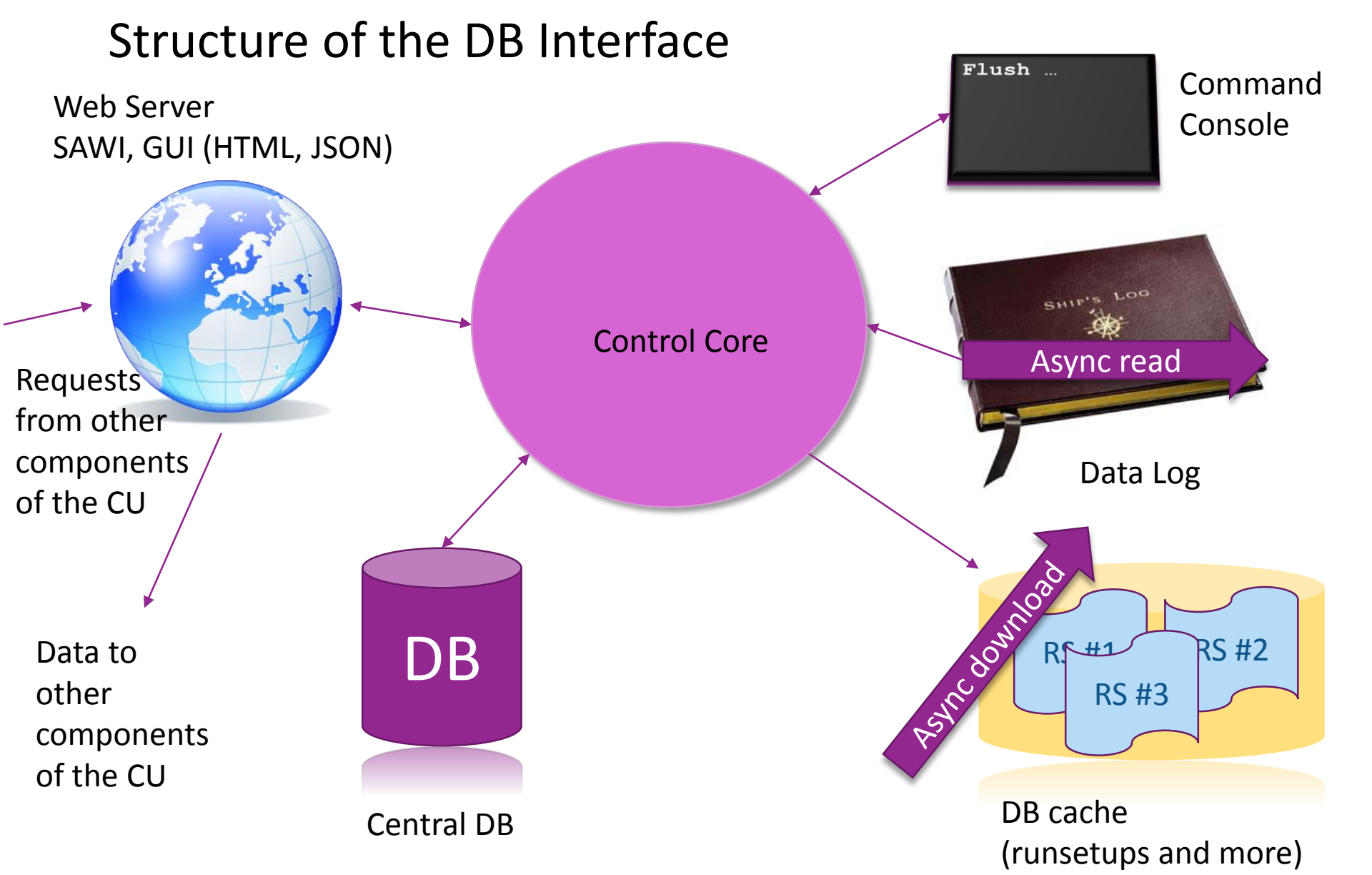
DB Interface – DB access to support acquisition



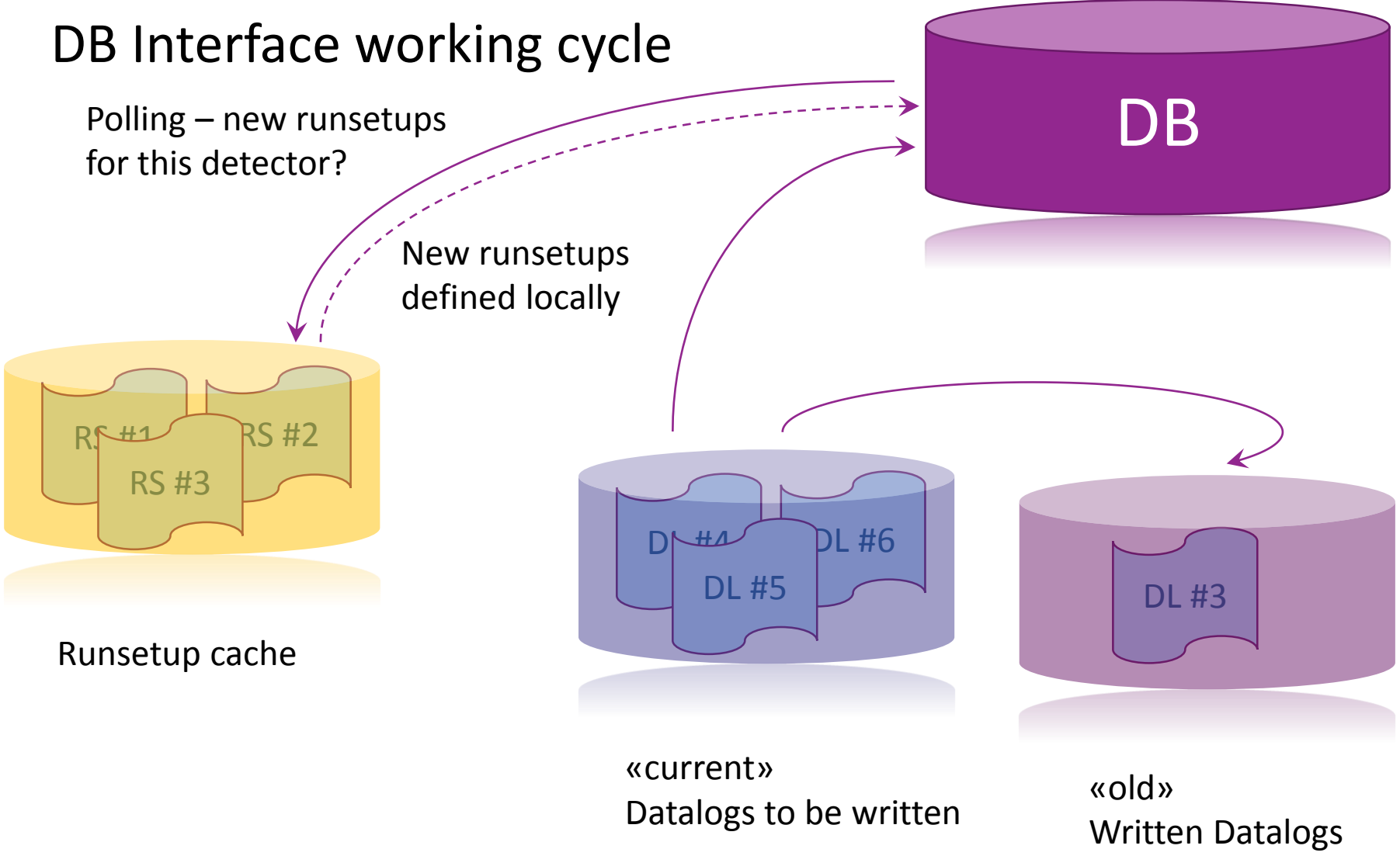
Detector Manager Structure



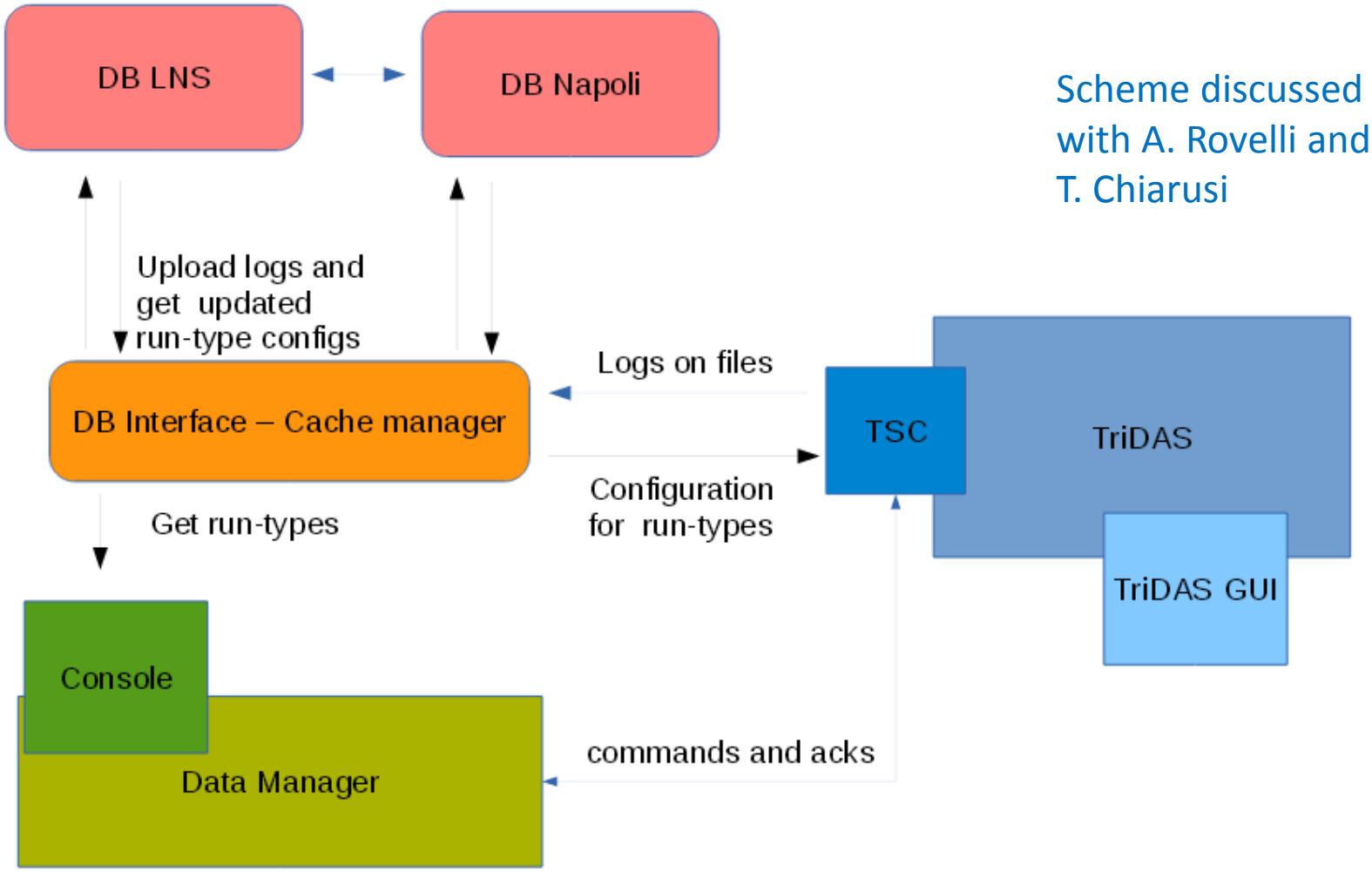
Structure of the DB Interface



DB Interface working cycle



DB Interface in the towers: re-use SW from strings



Scheme discussed with A. Rovelli and T. Chiarusi

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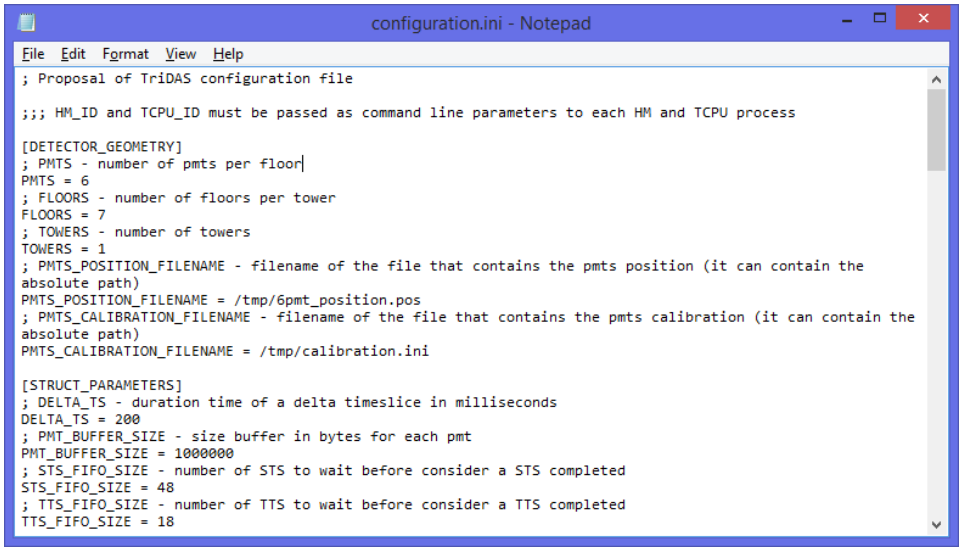
DB Interface in the towers: re-use SW from strings

- Runsetup set for Data Manager and TriDAS
  - Format definition underway: Matteo Manzali



- Uploading TriDAS logs into DB (technology similar to CU Datalogs)

Requirements for graphical interfaces

- Matteo Favaro volunteered

- Technology: HTML+Javascript+AJAX+JSON
  - Ease of integration into web applications (central webservers, DetectorManager, DBInterface, TriDAS Manager)
- Building runsetup/detector descriptions by GUI
- Ease of use
- Completeness
- Importing-reusing runsetups from DB or local cache

Web server for graphical interfaces

- Same technology as central Web services and CU
- Access and management of runsetup will be identical in central Web services and in shore stations
  - Local and remote handling of runsetups
- JSON protocol
- Functions to implement
  - List
  - Read
  - Write